

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. An identifier indicating the status of each claim is provided.

Listing of Claims

1. (Currently Amended) A system for recording and/or reproducing broadcasting programs received or programmed to be received, comprising:
 - program sorting means for sorting said broadcasting programs into categories according to a predetermined rule;
 - virtual channel management means for assigning virtual channels to respective categories, and for setting said broadcasting programs, sorted into said categories, in sequential order on the assigned virtual channels;
 - program recording means for recording said broadcasting programs in the respective categories on the assigned virtual channels or programming a recording schedule thereof;
 - user operation means for accepting user-based channel select operation and/or program search operation on said virtual channels; and
 - program presentation means for extracting a corresponding broadcasting program for reproduction from a selected virtual channel in response to user operations accepted through said user operation means,
- wherein time base for display of each virtual channel advances independently and continuously on each virtual channel for the period of time when other virtual channels are

selected to give a viewer an impression that virtual channels are indistinguishable from non-virtual channels.

2. (Currently Amended) A system for recording and/or reproducing ~~broadcasting~~ programs according to claim 1,
wherein an entry of the categories of said virtual channels is made according to user profiles and/or user instructions.

3. (Currently Amended) A system for recording and/or reproducing ~~broadcasting~~ programs according to claim 1,
wherein said virtual channels include a virtual channel for array of programs, which are not included in any category for the failure to set an associated category by the user.

4. (Currently Amended) A system for recording and/or reproducing ~~broadcasting~~ programs according to claim 1,
wherein said program sorting means is to sort said ~~broadcasting~~ programs into categories according to EPG (Electronic Programming Guide) and/or user instructions.

5. (Currently Amended) A system for recording and/or reproducing ~~broadcasting~~ programs according to claim 1,
wherein the reproduction start order of the programs on the virtual channels is in conformity with a priority established in accordance with at least one of an on-the-air program order, user profiles and user instructions.

6. (Currently Amended) A system for recording and/or reproducing broadcasting programs according to claim 1,
wherein said virtual channel management means is to shift reproduction start positions on the virtual channels in the process of being selected and non-selected with the lapse of real time.

7. (Currently Amended) A system for recording and/or reproducing broadcasting programs according to claim 1,
wherein said user operation means is to accept program search operations including pause, fast forward and rewind of reproduction positions on the virtual channels.

8. (Currently Amended) A system for recording and/or reproducing broadcasting programs according to claim 1,
wherein said user operation means is to accept operations of specifying a broadcasting program preservative status, inclusively of deletion, preservation and reservation, for later watching, relating to specific programs on the virtual channels.

9. (Currently Amended) A system for recording and/or reproducing broadcasting programs according to claim 1,
wherein said virtual channel management means is to manage the preservative status of the programs set in array on the virtual channels as well.

10. (Currently Amended) A system for recording and/or reproducing broadcasting programs according to claim 1,
wherein said virtual channel management means is to identify each program set in array on the virtual channels as one watched by the user or not.

11. (Currently Amended) A system for recording and/or reproducing broadcasting programs according to claim 1,
wherein said virtual channel management means is to locate the programs on the virtual channels according to a specified preservative status with respect to each of the recorded programs.

12. (Currently Amended) A system for recording and/or reproducing broadcasting programs according to claim 1,
wherein said virtual channel management means is to locate a program, identified as one watched, in a period of a near past on a time base on the associated virtual channel.

13. (Currently Amended) A system for recording and/or reproducing broadcasting programs according to claim 1,
wherein said virtual channel management means is to locate a program, identified as one programmed to be deleted, in a period of a remote past on a time base on the associated virtual channel.

14. (Currently Amended) A system for recording and/or reproducing broadcasting programs according to claim 1,
wherein said virtual channel management means is to locate a program, identified as one preserved, in a period of a slightly remote past on a time base on the associated virtual channel.

15. (Currently Amended) A system for recording and/or reproducing broadcasting programs according to claim 1,
wherein said virtual channel management means is to locate a program, identified as one programmed to be recorded, in a period of a future, provided that a point on and after a broadcasting date is required, on a time base on the associated virtual channel.

16. (Currently Amended) A system for recording and/or reproducing broadcasting programs according to claim 1,
wherein said virtual channel management means is to locate a program, identified as one remaining recorded without being watched, in a period of a future spare time on the associated virtual channel.

17. (Currently Amended) A system for recording and/or reproducing broadcasting programs according to claim 1,
wherein said virtual channel management means is to locate a program, identified as one in process of reservation, in a period of a future spare time on the associated virtual channel preferentially.

18. (Canceled)

19. (Currently Amended) A system for recording and/or reproducing
~~broadcasting~~ programs according to claim 1,
wherein said virtual channel management means is to display scheduling of
programs on each virtual channel and a watching status and a preservative status of each
program in a form of being identified at a glance.

20. (Currently Amended) A system for recording and/or reproducing
~~broadcasting~~ programs according to claim 1,
wherein said virtual channel management means is to locate a series of programs
on a same virtual channel continuously.

21. (Currently Amended) A system for recording and/or reproducing
~~broadcasting~~ programs according to claim 1,
wherein said virtual channel management means is to shift a reproduction start
position on the virtual channel in a process of being selected to a period of a future or a past on a
time base in response to fast forward or rewind instructions supplied through said user operation
means.

22. (Currently Amended) A system for recording and/or reproducing
~~broadcasting~~ programs according to claim 1,

wherein said virtual channel management means permits no fast forward operation for a program corresponding to one earlier than a ~~broadcasting~~-date.

23. (Currently Amended) A system for recording and/or reproducing ~~broadcasting~~-programs according to claim 1,

wherein said virtual channel management means is to shift a reproduction start position on the virtual channel in a process of being selected to a period of a future or a past on a time base in response to fast forward or rewind instructions supplied through said user operation means, while setting a reproduction start position on the virtual channel in a process of being non-selected to follow the lapse of real time.

24. (Currently Amended) A system for recording and/or reproducing ~~broadcasting~~-programs according to claim 1, further comprising real channel management means for assigning real channels to ~~broadcasting~~ programs ~~on-the-air~~, wherein said program presentation means is to take out the recorded program for reproduction from the virtual channel selected through said user operation means in response to the selection of said virtual channel, while presenting the ~~on-the-air~~ program on the real channel selected through said user operation means in response to the selection of said real channel.

25. (Currently Amended) A system for recording and/or reproducing ~~broadcasting~~-programs according to claim 24,

wherein said user operation means is to accept a channel select operation requiring no distinction between the real channels and the virtual channels.

26. (Currently Amended) A system for recording and/or reproducing broadcasting programs according to claim 1, further comprising:
management means for managing reproduction information relating to programs paused on each virtual channel.

27. (Currently Amended) A system for recording and/or reproducing broadcasting programs according to claim 26,
wherein said management means displays a list of paused programs for accepting the user selection on the list, and starts reproduction of the corresponding recorded program in response to the user selection.

28. (Currently Amended) A method of recording and/or reproducing broadcasting programs received or programmed to be received, comprising:
a program sorting step of sorting the broadcasting programs into categories according to a predetermined rule;
a virtual channel management step of assigning virtual channels to respective categories, and of setting said broadcasting programs, sorted into said categories, in sequential order on the assigned virtual channels;
a program recording step of recording the broadcasting programs in the respective categories on the assigned virtual channels or programming a recording schedule thereof;

a user operation step of accepting a user-based channel select operation and/or a program search operation on the virtual channels; and

a program presentation step of extracting a corresponding ~~broadcasting~~ program for reproduction from a selected virtual channel in response to the user operation accepted through said user operation step,

advancing a time base for display of each virtual channel independently and continuously on each virtual channel for the period of time when other virtual channels are selected to give a viewer an impression that virtual channels are indistinguishable from non-virtual channels.

29. (Currently Amended) A method of recording and/or reproducing ~~broadcasting~~ programs according to claim 28,

wherein an entry of categories of the virtual channels is made according to user profiles and/or user instructions.

30. (Currently Amended) A method of recording and/or reproducing ~~broadcasting~~ programs according to claim 28,

wherein said virtual channels include a virtual channel for array of programs, which are not included in any category for the failure to set an associated category by the user.

31. (Currently Amended) A method of recording and/or reproducing ~~broadcasting~~ programs according to claim 28,

wherein said program sorting step is to sort the ~~broadcasting~~-programs according to EPG (Electronic Programming Guide) and/or user instructions.

32. (Currently Amended) A method of recording and/or reproducing ~~broadcasting~~-programs according to claim 28,
wherein the reproduction start order of the programs on the virtual channels is in conformity with a priority established in accordance with at least one of ~~an on-the-air~~ program order, user profiles and user instructions.

33. (Currently Amended) A method of recording and/or reproducing ~~broadcasting~~-programs according to claim 28,
wherein said virtual channel management step is to shift reproduction start positions on the virtual channels in a process of being selected and non-selected in response to the lapse of real time.

34. (Currently Amended) A method of recording and/or reproducing ~~broadcasting~~-programs according to claim 28,
wherein said user operation step is to accept program search operations including pause, fast forward and rewind of reproduction positions on the virtual channels.

35. (Currently Amended) A method of recording and/or reproducing ~~broadcasting~~-programs according to claim 28,

wherein said user operation step is to accept operations of specifying a recorded program preservative status, inclusively of deletion, preservation and reservation, for later watching, of specific programs on the virtual channels.

36. (Currently Amended) A method of recording and/or reproducing broadcasting programs according to claim 28,
wherein said virtual channel management step is to manage a preservative status of programs set in array on the virtual channels.

37. (Currently Amended) A method of recording and/or reproducing broadcasting programs according to claim 28,
wherein said virtual channel management step is to identify the programs set in array on the virtual channels as one watched by the user or not.

38. (Currently Amended) A method of recording and/or reproducing broadcasting programs according to claim 28,
wherein said virtual channel management step is to locate the programs on the virtual channels in response to a specified preservative status with respect to each of the recorded programs.

39. (Currently Amended) A method of recording and/or reproducing broadcasting programs according to claim 28,

wherein said virtual channel management step is to locate a program, identified as one watched, in a period of a near past on a time base on the associated virtual channel.

40. (Currently Amended) A method of recording and/or reproducing broadcasting programs according to claim 28,

wherein said virtual channel management step is to locate a program, identified as one programmed to be deleted, in a period of a remote past on the base on the associated virtual channel.

41. (Currently Amended) A method of recording and/or reproducing broadcasting programs according to claim 28,

wherein said virtual channel management step is to locate a program, identified as one preserved, in a period of a slightly remote past on a time base on the associated virtual channel.

42. (Currently Amended) A method of recording and/or reproducing broadcasting programs according to claim 28,

wherein said virtual channel management step is to locate a program, identified as one programmed to be recorded, in a period of a future, provided that a point on and after a broadcasting date is required, on a time base on the associated virtual channel.

43. (Currently Amended) A method of recording and/or reproducing broadcasting programs according to claim 28,

wherein said virtual channel management step is to locate a program, identified as one remaining recorded without being watched, in a period of a future spare time on the associated virtual channel.

44. (Currently Amended) A method of recording and/or reproducing broadcasting programs according to claim 28,
wherein said virtual channel management step is to locate a program, identified as one in process of reservation, preferentially in a period of a future spare time on the associated virtual channel.

45. (Canceled)

46. (Currently Amended) A method of recording and/or reproducing broadcasting programs according to claim 28,
wherein said virtual channel management step is to display scheduling of programs on each virtual channel and a watching status and a preservative status of each program in a form of being identified at a glance.

47. (Currently Amended) A method of recording and/or reproducing broadcasting programs according to claim 28,
wherein said virtual channel management step is to locate a series of programs on a same virtual channel continuously.

48. (Currently Amended) A method of recording and/or reproducing broadcasting programs according to claim 28,
wherein said virtual channel management step is to shift a reproduction start position on the virtual channel in a process of being selected to a period of a future or a past on a time base in response to fast forward or rewind instructions supplied through said user operation means.

49. (Currently Amended) A method of recording and/or reproducing broadcasting programs according to claim 28,
wherein said virtual channel management step permits no fast forward operation for a program corresponding to one earlier than a broadcasting schedule date.

50. (Currently Amended) A method of recording and/or reproducing broadcasting programs according to claim 28,
wherein said virtual channel management step is to shift a reproduction start position on the virtual channel in a process of being selected to a period of a future or a past on a time base in response to fast forward or rewind instructions supplied through said user operation means, while setting the reproduction start position on the virtual channel in a process of being non-selected to follow the lapse of real time.

51. (Currently Amended) A method of recording and/or reproducing broadcasting programs according to claim 28, further comprising:

a real channel management step of assigning real channels to broadcasting programs ~~on the air~~, said program presentation step is to take out the recorded program for reproduction from the virtual channel selected through said user operation means in response to a selection of said virtual channel, while presenting the ~~on-the-air~~ program on the real channel selected through said user operation means in response to the selection of said real channel.

52. (Currently Amended) A method of recording and/or reproducing broadcasting programs according to claim 51,
wherein said user operation step is to accept a channel select operation requiring no distinction between the real channels and the virtual channels.

53. (Currently Amended) A method of recording and/or reproducing broadcasting programs according to claim 28, further comprising:
a management step of managing reproduction information relating to paused programs on each virtual channel.

54. (Currently Amended) A method of recording and/or reproducing broadcasting programs according to claim 53,
wherein said management step displays a list of paused programs for accepting user selection on said list, and starts the reproduction of the corresponding recorded program in response to the user selection.